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JOURNAL OF MORPHOLOGY,

EDITED BY



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WITH THE COÖPERATION OF

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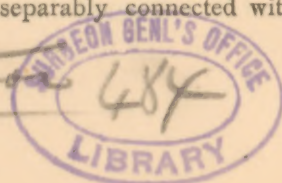
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THE JOURNAL OF MORPHOLOGY is devoted to the presentation of original research in all branches of animal morphology, but principally in *embryology*, *anatomy* and *histology*. The title of the Journal defines its scope only in a general way, and has been intentionally left free of all restrictives that would hamper discretionary freedom in the admission of desirable papers pertaining to human anatomy and embryology, or even such botanical papers as deal with subjects of equal interest to zoölogists and botanists.

As long as this remains the only Journal in our country that offers to publish zoölogical papers with adequate illustration, it will be both unnecessary and inexpedient to exclude important papers because they do not happen to be strictly morphological. No such rigid test has ever been applied in a journal of this kind, and a little reflection will show that it is clearly impracticable. Many of our best papers must deal with *mixed* problems pertaining no less—often more—to physiology than to morphology. The end of observation is interpretation, and the goal of all morphology lies in physiology, taken in its broadest and deepest sense. Embryology is one of the leading branches of morphology, and yet many of its more important problems are among the highest known to physiology. These problems are at present inseparably connected with

presented by the author



morphological work, and hence cannot properly be excluded from a morphological journal. The same holds true in anatomy and histology; for example, in the case of the sense-organs. The physiological explanation of these organs is what we are all striving for, whether we call ourselves morphologists or physiologists. So long as morphologists do most of the work, they will command the field, and their discussions and experimental observations will not be out of place by the side of their morphological studies. The time may come when animal physiology can be separated from animal morphology to the same extent that human physiology is now separable from human anatomy, but we are yet a long way from such conditions. For the present we must recognize the fact, that the relations and bearings of a subject often outweigh the logic of conventional distinctions, and sanction what might be construed as a violation of the letter, though not the spirit, of our terminology.

The Journal has met with a most encouraging reception, both at home and abroad. Its character and aims have been approved by a very large number of the highest authorities in biology, and its support on the part of contributors is rapidly increasing, making it necessary to publish a supplementary number to the second volume. It thus becomes evident that the Journal meets a real need and supplies a stimulus to scientific activity.

It has of course been clearly seen from the outset, that the Journal could not have a large number of subscribers, as its circulation must be confined mainly to scientific libraries and to the few investigators who are able to maintain a private library. Still it is desirable, to say the least, that such a periodical should become self-sustaining; and there is every reason to believe that its present circulation can be doubled in the course of a year or two, with such generous encouragement as has been given by many of the leading morphologists of the country, and by the American Society of Naturalists. But when the utmost that can be expected in this direction has been accomplished, the point of maximum efficiency will still be unattainable, except through the aid of a liberal endowment.

Most of our lithographic work has now to be executed in Germany, at a great loss of time, and inconvenience in supervision. There is no remedy except in the employment of an expert lithographer, to work under our immediate direction. Journals of this kind are not expected to undertake the publication of very extended

memoirs and monographical works, but it is evident that the ability to do this would greatly enlarge the Journal's sphere of usefulness and influence.

There are hopeful indications of a growing interest in this country in the morphological sciences. This is seen in the increased demand for instruction in these branches of knowledge, in the importance now attached to the maintenance of morphological laboratories in our leading colleges and universities, in the founding of a new marine laboratory at Wood's Holl; in the maintenance by Mr. Allis of the Lake Laboratory, devoted wholly to research; in the general desire to enjoy the advantages of such well-known marine laboratories as that of Mr. Agassiz at Newport, and the Chesapeake Zoölogical Laboratory, under the direction of Dr. Brooks. The outlook is most encouraging, and we may confidently predict a great increase in scientific productivity.

The demands upon the Journal will evidently increase rather than diminish, and it should be amply equipped for the task before it. May not a journal devoted to pure science, the first and only one of the kind in America, published in the interest of the zoölogists of the entire country, its character and aims commended by the foremost morphologists of the world, — may not such a journal appeal with propriety and confidence for every aid it may stand in need of for the fulfilment of its mission?

CONTENTS OF VOLUME I., NUMBER 1. SEPTEMBER, 1887.

- I. PROF. R. RAMSAY WRIGHT, and A. B. MACALLUM, University College, Toronto, Canada. *Sphyrnanura Osleri, a contribution to American Helminthology.*
- II. DR. J. S. KINGSLEY, State University, Bloomington, Ind. *The Development of the Compound Eyes of Crangon.*
- III. DR. WILLIAM PATTEN, Assistant in the Lake Laboratory, Milwaukee, Wis. *Eyes of Molluscs and Anthropods.*
- IV. DR. G. BAUR, Assistant in Yale College Museum, New Haven, Conn. *On the Phylogenetic Arrangement of the Sauropsida.*
- V. C. O. WHITMAN, Director of the Lake Laboratory, Milwaukee, Wis. *A contribution to the History of the Germ-layers in Clepsine.*
- VI. PROF. E. B. WILSON, Bryn Mawr College, Bryn Mawr, Pa. *The Germ-bands of Lumbricus.*

VII. DR. WILLIAM PATTEN, Assistant in the Lake Laboratory, Milwaukee, Wis. *Studies on the Eyes of Anthropods.*

1. *Development of the Eyes of Vespa, with Observations on the Ocelli of some Insects.*

THIS NUMBER CONTAINS SEVEN DOUBLE LITHOGRAPHIC PLATES AND ONE HELIOTYPE PLATE.

NUMBER 2. DECEMBER, 1887.

- I. C. O. WHITMAN. *The Kinetic Phenomena of the Egg during Maturation and Fecundation. (Oökinesis.)*
- II. DR. W. B. SCOTT, of Princeton College, N. J. *The Embryology of Petromyzon.*
- III. DR. HENRY ORR, Princeton, N. J. *A contribution to the Embryology of the Lizard.*
- IV. DR. H. F. OSBORN, Princeton College, N. J. *The Fœtal Membranes of the Marsupials.*
- V. GEORGE W. and ELIZABETH G. PECKHAM, Milwaukee, Wis. *Some Observations on the Mental Powers of Spiders.*

THIS NUMBER CONTAINS TEN LITHOGRAPHIC PLATES.

THE FIRST NUMBER OF VOLUME II., TO BE ISSUED IN JULY, 1888,
WILL CONTAIN THE FOLLOWING PAPERS.

- I. FREDERICK TUCKERMAN, M. D., Amherst, Mass. *Observations on the Structure of the Gustatory Organs of the Bat (vespertilio subulatus.)*
- II. E. D. COPE. *On the Tritubercular Molar in Human Dentition.*
- III. C. O. WHITMAN. *The Seat of Formative and Regenerative Energy.*
- IV. DR. H. F. OSBORN, Princeton College, N. J. *A Contribution on the Amphibian Brain.*
- V. DR. WILLIAM PATTEN, Assistant in the Lake Laboratory, Milwaukee, Wis. *Studies on the Eyes of Arthropods.*
 2. *Eyes of Acilius.*

THIS NUMBER WILL CONTAIN THIRTEEN PLATES.

The contents of the second and third numbers cannot now be announced in full, but the following papers are among those to appear:—

The Ossicula Auditus of the Batrachia. By E. D. COPE.

Further Studies on Grammicolepis brachiusculus Poey. By R. W. SHUFELDT.

On the Development of Manicina areolata. By HENRY V. WILSON.

Studies on the Testudinata. By DR. G. BAUR.

Uterus and Embryo. By C. S. MINOT.

The Structure and Development of the Visual Area in the Trilobite, Phacops rana Green. By J. M. CLARKE.

The Sense-organs of the Lateral Line System in Amia calva. By EDWARD PHELPS ALLIS, JR. This will be the first of a series of papers on the *Anatomy and Embryology of Amia*, and will be illustrated with fifteen or more lithographic plates.

The second number of the current volume will be published in September or October, and the third number in December.

TESTIMONIALS FROM AMERICAN BIOLOGISTS.

THE AMERICAN SOCIETY OF NATURALISTS.

TO DR. C. O. WHITMAN AND MR. E. P. ALLIS, JR.

Gentlemen:—The following Resolution was carried by a unanimous vote at the last annual meeting of this Society, held at New Haven, December 29, 1887:—

Resolved, That "The American Society of Naturalists" send to the editors of the "Journal of Morphology" their congratulations on the work which they have undertaken, and that the sum of (\$60) sixty dollars be appropriated from the funds of the Society for the purchase of ten (10) copies of the first volume of the Journal, and

Resolved, That a committee of three (3) be appointed by the chair to decide upon the best manner of distributing the copies purchased, with a view to securing to the Journal a wider circulation.

Very respectfully yours,

JANUARY 4, 1888.

SAMUEL F. CLARKE, *Secretary.*

Prof. E. L. MARK, *Harvard University*: The first number of the Journal of Morphology, so anxiously awaited by zoölogists, seems to me to surpass in every way the expectations even of those who have had the highest hopes for its success. Evidently no pains has been spared by either editor or publisher to make it first-class. Everyone in the country interested in zoölogy will be justly proud that at last we possess a zoölogical magazine which is equal to the best European publications.

THE NATION, *New York (Prof. B. G. Wilder, Cornell University)*: The Journal of [Animal] Morphology is the most ambitious American enterprise in pure zoölogy since the "Contributions" of the elder Agassiz, and, if duly sustained, will greatly advance science and be an honor to the country. Self-interest, pride of country, and regard for the progress of unmixed morphology, alike call upon every American zoölogist to aid in the firm establishment of this most commendable publication, produced as it is by the association of Boston with a city of the "Great Northwest."

THE AMERICAN JOURNAL OF SCIENCE (*Ed. by James D. and Edward S. Dana*): This new Journal comes into existence with all those high qualities as regards grade of scientific memoirs, beauty, fullness of illustrations, paper, typography and generous capacity, that we usually look for as the characteristics of slowly developed and successful maturity. It shows confidence in the scientific spirit of the country by placing itself at once on a level with the journals of the kind abroad, and well merits the success it looks for.

Prof. H. NEWELL MARTIN, *Johns Hopkins University*: I am sure that in future years the commencement of the publication of the Journal will be regarded as making an epoch in the history of American morphological science.

SCIENCE (*W. T. Sedgwick, Mass. Inst. of Technology*): In this periodical we have a substantial token of the progress of two distinct undertakings, of which all American scientists ought to be proud. The first is that of Dr. Whitman, the editor, whose hope and struggle for many months have been to set going in the right way a zoölogical periodical that shall worthily represent American morphologists before the world, and be a suitable outlet for our strong and increasing zoölogical literature. Prof. Whitman has certainly succeeded in making a good start. The other undertaking is that of Edward Phelps Allis, Jun., of Milwaukee, with whose coöperation the Journal is edited by Dr. Whitman. Mr. Allis first formed and then put into active operation the idea of a private biological laboratory of research.

THE MICROSCOPE (*Ed. by W. P. Manton, Detroit, Mich.*): The Journal is a magnificent contribution to the knowledge, science and push of the country.

Dr. R. W. SHUFELDT (*Captain Medical Corps, U. S. Army*): As a scientist of this country, I am more than proud of the work. It pleases me from cover to cover.

Prof. R. RAMSAY WRIGHT, *University College, Toronto*: It is the most elegant publication of the kind.

Prof. ALPHEUS HYATT, *Mus. of Comp. Zööl., Harvard University*: The Journal is a credit to the country, and every man of science ought to make an effort in its support.

Dr. HENRY F. OSBORN, *Princeton College*: The arrangement and execution of the first number of the Journal are admirable. I trust you will sustain the present standard, both of matter and form, which leaves nothing to be desired.

AMERICAN NATURALIST (*Ed. by Cope & Kingsley*): The appearance of the Journal of Morphology seems an event of sufficient importance in the

history of American science to warrant more than a mere announcement. Several times have magazines been started which were fondly expected to play the same part in the United States that the Quarterly Journal of Microscopical Science does in England, but all have lamentably failed. Their editors have not succeeded in gaining the confidence and support of the best American workers. This rock Dr. Whitman has apparently escaped, and his first number, in variety and breadth of treatment, as well as in beautiful appearance, will compare favorably with any publication in the Old World.

Prof. A. S. PACKARD, *Brown University*: It is high class in every particular, and a great credit to the country; and for one, I am proud of it.

TESTIMONIALS FROM EUROPEAN BIOLOGISTS.

Prof. ANTON DOHRN, *Director of the Zoölogical Station at Naples*: With the coöperation of the distinguished naturalists who have contributed to the first number, you need no further help to secure a wide circulation of the Journal. I have been especially pleased with the editorial remarks regarding the lack of *concentration* in the biological productions of the United States. Every serious worker in biology will heartily endorse this, and therefore second your efforts to improve that lamentable state of things.

Prof. CARL GEGENBAUR, *University of Heidelberg, Germany*: I wish the enterprise the best success. The grounds presented by Mr. Whitman in the introduction for the publication of this Journal are so evident that it is certain to meet with prosperity, provided it succeeds in arousing the interest of the scientific public. In this direction the first number makes a fine beginning.

Prof. RUDOLF LEUCKART, *University of Leipsic*: Your undertaking, in my opinion, is most promising, the more so as the debut has been so successful. Morphology is the watchword of the zoölogy of to-day. It dominates almost everywhere, and so exclusively as to take precedence of all else. How different when some forty years ago I wrote my contributions to the Morphology of the Invertebrates, and my colleagues denied every justification to the aim. Now one must almost ask indulgence for work in other fields of investigation.

Prof. G. B. HOWES, *Normal School of Science and Royal School of Mines, London*: I hail with intense satisfaction the publication of a Journal which, while it marks an epoch in the progress of science in America, gives promise of originality and merit second to that of none extant. The "get up" leaves nothing to be desired; it is in every way worthy of both the dignity of the biological sciences and the thoroughness of the work which forms the subject matter.

Prof. H. RABL-RÜCKHARD, *University of Berlin*: Judged from the contents of the first number, the Journal is destined to rank among the best of the Old World. It has the advantage of commending itself, and needs no other praise.

Prof. WILHELM HIS, *University of Leipsic*: I am greatly pleased with its contents and its appearance. The Journal will certainly win friends very rapidly.

Prof. H. LUDWIG, *University of Bonn*: I am delighted with the excellent and many-sided memoirs contained in it. If future numbers keep up to this standard, the *Journal of Morphology* will soon be reckoned among the most important scientific journals of the world.

Prof. J. B. CARNOY, *The Catholic University of Louvain, Belgium*: The work is magnificent, the press-work excellent, the plates superb. It is in every respect worthy of science and of America.

Dr. C. PH. SLUITER, *Librarian, Royal Society in Dutch India, Batavia*: The contents and "get up" of the volume are first-class.

Prof. AUGUST WEISMANN, *University of Freiburg*: It supplies a long-felt need, not only for America, but for Europe as well, and will, I trust, meet with the success it so richly deserves.

Prof. A. GRUBER, *University of Freiburg*: The work is admirable and magnificently executed.

Prof. W. FLEMMING, *University of Kiel*: You may be certain that I, with all morphologists of Germany, welcome the *Journal of Morphology* as a new and great contribution to the progress of science.

Dr. PAUL MAYER, *Ed. of the Zoölogical Review of the Naples Station*: America needed such a journal, and you are on the right way.

Prof. F. VEJDOVSKY, *University of Prague*: A careful study of the contents of the first number convinces me that the *Journal of Morphology* is destined to fulfil a very important mission in the advancement of the biological sciences.

The Publishers will be happy to send a single specimen number to any one who thinks of subscribing at the reduced price of \$3.00.

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